

TOOLESS BIT RETAINING ASSEMBLY

ABSTRACT

A bit retaining assembly for retaining a bit in a rotary tool, in particular a router such as a hand-held router, a table-mounted router, a pocket cutter, a laminate trimmer, a rotary cutout tool, or the like employs a planetary gear system for multiplying the torque applied to clamp the bit within a collet. The bit retaining assembly comprises a chuck for coupling the bit retaining assembly to the rotor shaft of the rotary tool. A collet is disposed in the chuck for receiving the bit. A nut threaded onto the chuck compresses the collet about the bit to secure the bit within the collet. A planetary gear system transmits torque applied to a housing member to the nut for rotating the nut on the chuck. Preferably, the planetary gear system multiplies the torque transmitted to the nut so that the torque transmitted to the nut is greater than the torque applied to the housing member.